



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,097	04/13/2004	Allen Kent Rives		3096

23508 7590 11/10/2004
LUNDEEN & DICKINSON, LLP
PO BOX 131144
HOUSTON, TX 77219-1144

EXAMINER

WALKER, ZAKIYA NICOLE

ART UNIT	PAPER NUMBER
----------	--------------

3672

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/709,097

Applicant(s)

RIVES, ALLEN KENT

Examiner

Zakiya N. Walker

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-22 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the term "the present invention" is recited in line 1. Correction is required. See MPEP § 608.01(b).
2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, and 4-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Beeman.

Beeman discloses a nutating (wobbling) bit that includes a nutating single cone drill bit (Fig. 2) comprising: a bit shank 14 to connect to a drill string and providing an eccentric, skewed threaded bore; a threaded journal 30 skewed threaded for

Art Unit: 3672

engagement in the eccentric, bore of the bit shank; a cutter body 12 rotatably carried on said journal; a plurality of cutter elements 40 affixed to an exterior peripheral side of said cutter body so that a tip of each cutter element is forward an intersection of a central axis of the drill bit body and an axis of rotation of the cutter body and a first chordal distance to the tip of each cutter element from an axis of cutter rotation is longer than a second chordal distance to said tip of each cutter element from an axis of the bit body rotation. With respect to depending claims 2 and 4-9, the reference teaches the limitations as claimed. With respect to claim 10, the reference discloses a single-cone cutter shell comprising: a hemispheric body 12 having a interior surface to support a plurality of bearings 50, 64, 66 on a journal having a rotational axis skewed to a central axis of a drill string; and, a plurality of cutter elements 40 disposed on an outer surface of said hemispheric body arranged so that a tip of each said tip lies forward a perpendicular plane to a rotational axis of the hemispheric body and each said tip is farther from the rotational axis of the hemispheric body than from the central axis of the drill string. With respect to depending claims 11-13, the reference teaches the limitations as claimed. With respect to claim 14, the reference discloses a single cone rotary drill bit comprising: a bit shank configured to connect to a drill string, said bit shank defining a bit axis and including a receptacle bore; a journal to be engaged within said receptacle bore, said journal configured to retain a cutter body thereupon, said cutter body defining a rotation axis; said rotation axis skewed from said bit axis by a skew angle; and a plurality of cutter elements mounted upon said cutter body, said cutter elements configured so that a tip of each cutter element is forward a plane

Art Unit: 3672

defined normal to said cutter axis at an intersection of said cutter axis and said bit axis.

With respect to depending claims 15-18, the reference teaches the limitations as claimed. With respect to claim 19, the reference discloses a drill bit comprising: a connection 14 to a drill string, said drill string defining a drill string axis; a cutter body, said axis wherein said drill string axis by a skew angle; and cutter body defining a rotational rotational axis is skewed from said a plurality of cutter elements dispersed about said cutter body, each cutter element having a tip, wherein each tip is forward a plane defined normal to said rotational axis at the intersection of said rotational axis and said drill string axis. With respect to depending claim 20, the reference teaches the limitations as claimed. With respect to method claim 20, the reference discloses a method to drill a formation, the method comprising: attaching a single cone drill bit to a drill string, the single cone drill bit configured such that a cutter body of the single cone drill bit includes a plurality of cutter elements, each cutter element having a tip forward a plane defined by about an axis of rotation of the cutter body at an intersection of the axis of rotation with an axis of rotation of the drill string; engaging the drill string with attached single cone drill bit into a bore; and rotating the drill string to drill the formation with the single cone drill bit, wherein the cutter body rotates slower than the rotation of the drill string and the cutter elements crush the formation coming into contact therewith. With respect to depending claim 22, the reference teaches the limitations as claimed.

5. Claims 1, 2, 4-11, and 14-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Willis.

Willis discloses a nutating bit that includes a nutating single cone drill bit 110 (Figs. 5-8) comprising: a bit shank 130 to connect to a drill string and providing an eccentric, skewed threaded bore; a threaded journal 140, 148 skewed threaded for engagement in the eccentric, bore of the bit shank; a cutter body 150 rotatably carried on said journal; a plurality of cutter elements 160 affixed to an exterior peripheral side of said cutter body so that a tip of each cutter element is forward an intersection of a central axis of the drill bit body and an axis of rotation of the cutter body and a first chordal distance to the tip of each cutter element from an axis of cutter rotation is longer than a second chordal distance to said tip of each cutter element from an axis of the bit body rotation. With respect to depending claims 2 and 4-9, the reference teaches the limitations as claimed. With respect to claim 10, the reference discloses a single-cone cutter shell comprising: a hemispheric body 150 having a interior surface to support a plurality of bearings on a journal having a rotational axis skewed to a central axis of a drill string; and, a plurality of cutter elements 160 disposed on an outer surface of said hemispheric body arranged so that a tip of each said tip lies forward a perpendicular plane to a rotational axis of the hemispheric body and each said tip is farther from the rotational axis of the hemispheric body than from the central axis of the drill string. With respect to depending claim 11, the reference teaches the limitations as claimed. With respect to claim 14, the reference discloses a single cone rotary drill bit 110 comprising: a bit shank configured to connect to a drill string, said bit shank defining a bit axis and including a receptacle bore; a journal to be engaged within said receptacle bore, said journal configured to retain a cutter body thereupon, said cutter body defining a rotation

Art Unit: 3672

axis; said rotation axis skewed from said bit axis by a skew angle; and a plurality of cutter elements mounted upon said cutter body, said cutter elements configured so that a tip of each cutter element is forward a plane defined normal to said cutter axis at an intersection of said cutter axis and said bit axis. With respect to depending claims 15-18, the reference teaches the limitations as claimed. With respect to claim 19, the reference discloses a drill bit 110 comprising: a connection to a drill string, said drill string defining a drill string axis; a cutter body, said axis wherein said drill string axis by a skew angle; and cutter body defining a rotational axis is skewed from said a plurality of cutter elements dispersed about said cutter body, each cutter element having a tip, wherein each tip is forward a plane defined normal to said rotational axis at the intersection of said rotational axis and said drill string axis. With respect to depending claim 20, the reference teaches the limitations as claimed. With respect to method claim 20, the reference discloses a method to drill a formation, the method comprising: attaching a single cone drill bit to a drill string, the single cone drill bit configured such that a cutter body of the single cone drill bit includes a plurality of cutter elements, each cutter element having a tip forward a plane defined by about an axis of rotation of the cutter body at an intersection of the axis of rotation with an axis of rotation of the drill string; engaging the drill string with attached single cone drill bit into a bore; and rotating the drill string to drill the formation with the single cone drill bit, wherein the cutter body rotates slower than the rotation of the drill string and the cutter elements crush the formation coming into contact therewith. With respect to depending claim 22, the reference teaches the limitations as claimed.

Allowable Subject Matter

6. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Evans and Harris teach nutating (or wobbling) bits with bearing or fluid conduit details.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zakiya N. Walker whose telephone number is (703) 305-0302. The examiner can normally be reached on Tuesday-Friday, 6:30 AM-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Zakiya N. Walker
Primary Examiner
Art Unit 3672

ZW
November 2, 2004